**UNIT 1 (INFLAMMATION)**

ICAM🡪 Pavementing

PCAM🡪 Transmigration

VCAM 🡪 Pavementing

Integrin🡪 Pavementing

Selectin 🡪 Rolling

C5a 🡪 Chemotaxis

C3b 🡪 Opsonin

NBT 🡪 Chronic granulomatous disease of childhood

GP9PHOX 🡪 X linked

Interferon gamma 🡪 Cytokine. Activates macrophages

P47PHOX 🡪 Autosomal recessive (GCDC)

Membrane enzyme 🡪 NADPH oxidase (cytoplasmic and membrane)

Cyclooxygenase 🡪 <<<she forgot to do this one>>>

Epithelioid Cells 🡪 Granulomas

Major basic protein 🡪 Eosinophils

Interferon Gamma 🡪 Granulomas, macrophages

Neurotransmitters 🡪 Fever

Caseous granulomas 🡪 TB

Erythema nodosum 🡪 Painful nodules on shin, Sarcoidosis

**UNIT 2 (VASCULAR & HEART)**

Dz of intima—atherosclerosis

Dz of media—montenberg ? spelled wrong. Occurs usually in the leg and would see calcified BV’s on xray

high sensitivity C reactive protein - risk of dev coronary artery dz

hyalinization-- benign hypertension

hyperplastic arteriolar sclerosis—malignant HTN (early stages)

onion skinning—malignant hypertensions (will see very plump and swollen endothelial cells on electromicroscopy) In the advanced stages will see onion skinning

intial trigger for atherosclerosis—endothelial cell injury

intima thickening—SMC migration

TGFbeta: inhib growth (so prevent cap, thickening etc)

PDGF - bad guy main player in formation of atherosclerosis

lipoprotein a - bad guy

defect in fibrillin-1: marfan sx

mutation in TGF receptor- Loez-Deitz

Prolapse mitral valve- marfans

25% risk of rupture—aneurysm greater than 6 cm

tree bark appearance—syphilis

DeBakey type I—asc and desc. Aortic dissection

Mid-systolic click- mitral valve prolapse!!!

Tear chest pain radiating to the back—aortic dissection

Anti-endothelium Ab- Kawasaki

Smoking and inflamed V. A. N.—Beurger

Neuropathy—Churg Straus

Risk for PE- thrombophlebitis

Polymyalgia rheumatica—temporal arteritis

Inflamm of aortic arch and branches—Takyasu

Hep B—PAN

Tree bark--- syphilis

Asthma—Churg Straus

Persistent fever in child w/ rash—Kawasaki

Strawberry tongue—Kawasaki

LDL receptor mutation—hyperlipidemia 2a

Weak brachial pulses—takyasu

Trousseau sign—migratory thrombophlebitis assoc with malignancy (tumor)

Coronary artery aneurysm—Kawasaki

Mid systolic click—mitral prolapse

Hep B- PAN

Anti proteinase 3—cANCA

Sinusitis—Wegener

Leg pain plus smoking—Beurger

Hyperplastic arteriolar sclerosis—malignant HTN

Medial cystic Necrosis—Marfan

Polymyalgia rheumatic—giant cell artritis

Inflamm of A. V. N. w/ microabsesses—Beurgers

Vignettes before ischemic heart dz lecture

--35 y/o man w/ perasthesias in his L foot (mononeuropathy) for 3 weeks

--puritic rash on chest for 3 months

--asthma 6 months ago

Dx: Churg Strauss

Tests: pANCA and will see eosinophilia on CBC

65 y/o woman with dysphagia, cough, and hoarseness of voice for a year. Numbness and tingling in her hands and feet. Widow of a sailor during Vietnam war.

Dx: Syphilis with thoracic aortic aneurysm

Tx: check for syphilis and do an echo for thoracic aneurysm

42 y/o drug user w/ h/o Hep B dx’d 6 months ago. Presents w/ productive cough, sputum is tinged with blood and urine is pink

Dx: PAN DOESN'T INVOLVE LUNGS! So either Wegener or microscopic polyangitis ---do pANCA or cANCA (Wegener)

45 y/o man rushes to ER after he collapses. Pulseless but EKG revealed abnormal electric signals🡪pulses parodoxicus—no pulse but see signals on EKG🡪 ALWAYS MEANS CARDIAC TEMPONADE probably from MI

55 y/o has higher sensitivity CRP, blood glucose, lipid profile is normal, not a smoker, he is active. 🡪 He is at high risk for atherosclerosis b/c he has high lipoprotein a (u checked homocysteine levels and they were normal and hes not HTN

**Unit 3 (HEART & KIDNEY)**

Heart Failure Cells—macrophages with hemosiderin seen in the alveoli of the lungs

Alpha actin mutation—dilated cardiomyopathy

Cardiac Fibers disarray—hypertrophic cardiomyopathy (aka idiopathic hypertrophic subaortic stenosis)

Anti-angiogenic cleavage product of prolactin—peripartum dilated cardiomyopathy

Dystrophin mutation—dilated cardiomyopathy

Cor pulmonale—R sided heart failure due to lung problems (L side might be fine)

Elevated LDH5 in CHF—happens in R sided heart failure and happens when dilatation of the sinusoids and the hepatocytes get compressed and they necrosis around the central vein area and release LDH5

Elevated BNP—heart failure

Alcohol—dilated cardiomyopathy

**Mutation of Beta-myosin heavy chain—hypertrophic cardiomyopathy**

Staph Aureus—normal valves

Strep Viridians—abnormal valves

Marantic endocarditis—trousseau sign and pancreatic tumor and other malignancy

Both sides of the valve—Libman-Sacks Dz

Stenosis –syncope

Fish mouth mitral valve—rheumatic fever (RF)

Macolumn patch—it is in the endocardium and is associated with RF

SLE—Libman sacs endocarditis

Trousseau sign—hypercoagulability and marantic endocarditis

Osler Nodes—painful on the pulp of the fingers

Roth Spots—hemorrhagic spots on the retina

Splinter hemorrhages—Infective endo

Janeway lesion-painless on the soles and palms

Immunologic complication in infective endocarditis—glomerulonephritis

Mid systolic click—mitral valve prolapse

Caterpillar nucleus—Anitschkov Cells

Fibrillous pericarditis—post MI (Dressler’s Syndrome), RF, and uremic pericarditis associated with chronic renal failure

Syncope—aortic stenosis

35 y/o woman comes in w/ a facial rash and has arthralgias, she dies in a car accident what will you see in her heart?—will see lesions on both sides of the valves b/c she has Libman Sac’s endocarditis (associated w/ SLE)

18 y/o boy present w/ fever and tachycardia with fever 5 days after a tooth extraction—temp is 102 and has a new murmur and a hemorrhagic spot on his retina🡪 the boy has infective endocarditis so do a blood culture and echo. Since it was a tooth extraction and he has no underlying heart dz HACEK bacteria are probably most likely the cause.

84 y/o man w/ 2 episodes of syncope while playing golf—dx is aortic stenosis, dx by echo, and pathogenesis is wear and tear and severe atherosclerosis

polyvinyl chloride—liver hemangiosarcoma (industrial occupation hazard)

Kaposi Sarcoma—HHV8

Myxoma—dizziness and loss of consciousness, positional, problems with blood flow and part of carney sx

Rhadbomyoma—associated with tuberous sclerosis

Radiation therapy—adhesive mediastino pericarditis (chronic) and also cavernous hemangioma

Chemotherapy—dilated cardiomyopathy (adriomyosin toxicity??)

Low C3 and C4 in serum thing of activation of the classical complement pathway—Post Strep glomerularneph

Impetigo—post strep

Humps—post strep

Occurs in renal transplant—Berger sx—IgA Nephropathy

Palpable rash- Henoch-schonlein (HS) Purpura

↑ serum IgA-- Henoch-schonlein (HS) Purpura

Normal Bleeding Time-- Henoch-schonlein (HS) Purpura

RBC Casts—nephritic syndrome

Hep B—PAN

C ANCA-Wegner

Antibodies to α3 chain of collagen type IV—Good pastures syndrome

Berger-IgA

IgA deposits in the skin—HS purpura

Eosinophilia- PAN

Linear IgA deposits—good pastures (see anti-Glomerular BM)

good pastures--see anti-Glomerular BM

1. 40 y/o man presenting w/ hemoptysis hematuria, and acute renal failure for 3 days. What does he have? What tests? Should we do a renal biopsy?

--He has good pastures sx—why not wegner? b/c it is very acute and wegner doesn't behave like that. Run serologic tests for anti-IgM. Will do a renal biopsy and on LM you will see crescents and IF you will see LINEAR IgG

2. IVDU, skin rash, hematuria, HTN, eosinophilia. Ddx and renal morphology? PAN b/c eosinophilia and IVDU may suggest HepB. And you will see necrotizing vasculitis in the kidney

3. 25 y/o man is asx and notices blood in his urine. What is ddx? IgA nephropathy.

4. 10 y/o boy presents w/ palpable red rash on butt, abd pain, and arthralgia. Ddx? Henoch-schonlein (HS) Purpura. Skin findings? IgA deposits. Serologic tests? High serum IgA

5. Hematuria and HTN, his BUN and Creatinine are elevated and RBC casts in his urine (nephritic). What would you like to ask? Did he have a sore throat or impetigo (skin infection). What blood tests? ASO and C3 and C4 (will be low). On LM? Mesangial cell prolif and necrosis. IF? Lumpy bumpy deposits. EM? Humps on subepithelium

Full house IF🡪 SLE

Low C3🡪 In nephritic is either post-strep or SLE

IgG deposits in tubular basement membrane🡪 SLE

PAN🡪 does not involve the lung!!

Schistocytes and hematuria🡪 HUS, TTP, malignant HTN, scleroderma

Fibrin🡪 crescent

45 y/o woman presents w/ tight skin on her face and dysphagia, and her hands swell when she reaches into her freezer and shes also hypertensive. DDx? Scleroderma. Test? ANA (high titer speckled) and SCL 70. Renal bx? Sclerosis.

Spikes on EM or jones stain🡪 Membraneous nephritis

Apple green bifuringence🡪 amyloid

Hep C🡪membranoprolif dz type 1, and cryoglobulinemia

Hep B🡪 nephritic (PAN), nephrotic (membranous nephritis)

If you have a pt w/ pulmonary fibrosis in the context of the Glom Dz 2 lecture 🡪 Scleroderma

Anti-smith🡪 SLE

Selective proteinuria 🡪 lipod nephrosis

Nephoritic/nephritic combo🡪 SLE, membranoprolif dz, focal segmental glomerulosclerosis

KW lesions🡪 Diabetes

Mesangialization🡪 Membranoprolif type 1

Ribbon like deposits in lamina densa on EM🡪 membranoprolif type 2

Malignant lymphoma🡪 membranous dz

Subendothelial deposits🡪 SLE

Full house IF🡪 SLE

Deposits in tubular BM🡪 SLE

Oval fat bodies🡪 they are tubular cells filled up with lipid droplets (lipidurea—spilling lipids in the urine)🡪 nephrotic sx

Cortical medulla glomeruli🡪 focal segmental glomerular sclerosis

Associated with HIV 🡪focal segmental glomerular sclerosis collapsing type

\*\*cytokines damage to podocytes (visceral epithelial cells) 🡪 lipoid nephrosis

If a patient comes in and says they notice that their urine if FOAMY 🡪 means they are spilling large amounts protein into their urine so check the urine for proteins and quantify how much they are spilling

5 y/o presents with itchy vesicular rash and foamy urine for 6 days. Urinalysis (UA) showed 4+ bodies and oval fat bodies and when you quantitate he has 7 gm/24 hours🡪 Patient has membraneous nephritis related to posion ivy!

58 y/o woman with cervical lymphadenopathy and the LN become painful when she drinks wine. She presents with bilateral pitting edema and her serum cholesterol is 400. UA shows 4+ protein 🡪 LN painful when drinking wine points to Hodgkins lymphoma (so malignant lymphoma)🡪 nephrotic syndrome🡪 Membraneous nephritis

45 y/o surgeon w/ h/o Hep C has nephrotic syndrome. Dx? What will you see on renal bx? Dx🡪 is Membranoproliferative dz type 1. On LM will see 1. Lobular proliferation of mesangial cells 2. Thick BM and if you did Jones/silver stain you will see split BM. On immunofluourescence will show IgG and C3, C3 will be around the lobules not the around the papillary loops?. EM will see mesangialization.

Papillary necrosis 🡪 analgesic use for prolong period of time and large amounts

Sterile pyuria🡪 chronic renal papillary necrosis

58 y/o lady with rheumatoid arthritis for 25 years🡪 she presents w/ renal colic (**Renal colic** is a type of abdominal pain commonly caused by kidney stones. It is intense flank pain that radiates down the ureter b/c it is contracting trying to expel something and the pain radiates down to the groin) and turbid urine. Her UA shows many neutrophils but no bacteria🡪 sterile pyuria. Dx? Chronic interstitial nephritic🡪 tubular papillary necrosis. She has RA which means she’s probably been taking analgesics for a long time so ask her about analgesic use.

70 y/o male with constipation for 4 weeks presents to the ER w/ back pain and renal failure. DDx? Constipation is important🡪 hypercalcemia is associated w/ constipation so patient probably has multiple myeloma. Confirm this with immunoglobulin electrophoresis in the serum and urine both and in the Bone marrow. Renal changes? In the glomeruli🡪 Amyloid and light chain. Tubules will see obstruction, destruction and calcification. In the interstitium will see infiltrates.

Sickle cell dz and renal probs🡪 papillary necrosis

Papillary necrosis 🡪 sickle cell dz, diabetes, chronic analgesic abuse/use, severe pyelonephritis w/ obstruction.

Probs w/ α-3 chain of type 4 collagen🡪 good Pasteur

Pulmonary fibrosis and renal dz🡪 scleroderma

GI, skin and kidney probs in children🡪 HS purpura

GI, skin and kidney probs in adults🡪 PAN

Humps🡪 post strep

Subendothelial deposits🡪 SLE

Onion skinning 🡪 malignant HTN

Hyalinization🡪 benign HTN

Tubulorexis?--> ischemic tubular necrosis

Calcium oxylate crystals in the urine🡪 antifreeze which is ethylene glycol

Staghorn stone🡪 proteus mirabilis, splits urea and calcium phosphate crystal deposition. Complication of staghorn stone is hydronephrosis and eventually pyonephrosis (full of pus)

Damage to visceral epithelial cells of the glomerulus 🡪 lipoid nephrosis

Hep C-membranoprolif type 1

HIV- collapsing focal segmental glomerulonephrosis

Full house fluorescence—SLE

Muddy brown casts🡪 ATN

Sterile pyuria—papilary necrosis

Eosinophils in the urine🡪 acute interstitial nephritis

Poison ivy—membraneous nephritis

Fibrin🡪 crescents🡪 rapidly progressive glomerulonephritis

Berry aneurysm🡪 adult polycystic kidney

Esophageal atresia 🡪 dysplastic kidney

Radial arranged cysts🡪 infantile cystic dz

Autosomal dominant🡪 adult polycystic kidney dz

Increased PTH🡪 renal osteodystrophy

Metabolic acidosis assoc w/ high anion gap 🡪 chronic renal failure

**UNIT 4 (RESPIRATORY AND NEURO)**

**OBSTRUCTIVE LUNG DISEASES**

Cyanosis🡪 chronic bronchitis

Smoking🡪 emphysema (centriacinar) and chronic bronchitis

α1 trypsin deficiency can develop liver cirrhosis b/c this enzyme is produced in the liver

one sided pneumonectomy🡪 other side hyperinflation

emphysema in pt less than 40 y/o🡪 emphysema α1 trypsin deficiency

cor pulmonale 🡪 chronic bronchitis

flat diaphragm 🡪 emphysema

barrel chest🡪 emphysema

panacinar emphysema🡪 α1 antitrypsin deficiency ‘

65 y/o male w/ dyspnea and productive cough w/ clear sputum for 6 weeks. He reports having walking pneumonia w/ productive cough that lasted for 3 months last year. Ddx: chronic bronchitis and want to ask him if he’s a smoker. What do you expect to see when you examine his head and neck 🡪 blueish hue in his face and you will see distended jugular vein b/c cor pulomale (R-sided HF)

55 y/o lady w/ h/o back pain for 5 years she presents with recurrent attacks of severe shortness of breathe and wheezing for the past 3 months. Salient features of this vignette: Wheezing= obstruction; Back pain: taking NSAIDS. So NSAIDS can ppt intrinsic asthma. So ask the woman what meds shes on.

Recurrent respiratory viral infection🡪 intrinsic asthma

Hyperplasia of the submucosal glands🡪 chronic bronchitis and asthma

Curshman spiral seen in the sputum in asthmatic patients🡪 epithelial cells trapped in mucous

Charcot-Leyden crystals🡪 eosinophil major basic protein (this protein damages the epithelium)

Hypertrophy of the SM of the bronchioles and bronchi🡪 asthma

ADAM-33 & YKL40🡪 associated w/ asthma

Azospermia🡪 cystic fibrosis

Steatorrhea🡪 cystic fibrosis

↑ sweat chloride🡪 cystic fibrosis

Foul smelling sputum🡪 bronchiectasis (cystic fibrosis can lead to bronchiectasis!!)

**DIFFUSE INTERSTITIAL LUNG DISEASES**

3/5 y/o black women present w/ painful nodules on her legs, eyes itchy and watery and recurrent viral infection. She has sarcoidosis: erythema nodosum, conjunctivitis, recurrent viral infection. What do you want to ask this lady? Does she have a DRY COUGH. LABS: Ca and ACE.

65 y/o shipyard worker presents w/ dyspnea and fatigue for 6 months. ASBESTOS. If the dyspnea and fatigue are caused by MESOTHELIOMA🡪 Amphibole fibers

65 y/o lady has silicosis after she retires from a glass factory. She also has h/o of RA🡪 she has CAPLAN syndrome

55 y/o man presents w/ interstitial pulmonary fibrosis after being on anti-arrythmic med 🡪 AMIODORONE

Alveolitis—restrictive lung dz

Caplan Syndrome—RA and pneumoconiosis

Amiodorone🡪 pulmonary fibrosis, microvesciular steatosis of the liver (fat infiltration of the liver w/ small fat droplets), and hypothyroidism

Raynauds phenom and pulmonary fibrosis🡪 scleroderma

Honeycomb lung🡪 restrictive lung dz

Tb and silicosis🡪 inhibits ability of the macrophages to kill/phagocytose mycobacteria

g-IFN🡪 granulomas (b/c it activates the macrophages)

amphibole fibers🡪 mesothelioma

hypercalcemia🡪 sarcoidosis

pigeon dropping🡪 hypersensitivity pneumonia

egg shell calcifications🡪 silicosis

ADAM-33🡪 asthma

Antibodies to GM-CSF🡪 alveolar proteinosis (acquired)

Recurrent pulm infection, male infertility, fatty diarrhea🡪 cystic fibrosis

Mental changes🡪 hypercalcemia🡪 sarcoidosis

A 55 y/o lady w/ a h/o RA for 20 years presents w/ severe shortness of breath for 6 months. Chest x ray reveals honeycomb lung. No occupational exposure. Ask about meds. Prob not just rheumatoid lung because don’t get honeycomb lung (you see nodular lesions w/ rheumatoid lung). Probably on methotrexate. Methotrexate can cause diffuse fibrosis of the lung and liver toxicity.

Female w/ unexplained liver enzymes and she has dyspnea on exertion. Panacinar empysyma. Usually in lower lobes. (Centriacinar emphysema is usually in upper lobes)

Young Male, sudden onset sharp right chest pain. Decreased breath sounds. Sharp chest pain means plural irritation of some kind. Decreased breath sounds means there’s a barrier between you and his lungs. **Possibly spontaneous pneumothorax because of paraseptal emphysema (usually peripheral)**. Could also be pleural effusion.

Chitinase 🡪 YKL40. Related to asthma

Metalloproteinase 🡪 ADAM33. Related to Asthma

**Leukotriene 🡪 Asthma**

Recurrent respiratory infections & male infertility 🡪 Sick cilia. If GI probs too, Cystic Fibrosis (CF)

Steatorrhea 🡪 CF

Salty sweat 🡪 CF

Eosinophil MBP 🡪 Epithelia damage🡪 Charcot-Leyden crystals

Hyperinflation vs Emphysema 🡪 Emphysema has alveolar wall destruction

PIS 🡪 alpha1 antitrypsin

Increased Reed index 🡪 chronic bronchitis

TB 🡪 Silicosis

Caplan 🡪 RA & w/ any Pneumoconioses

Serositis 🡪 SLE

Aspirin 🡪 Intrinsic asthma

Thyroid dysfunction 🡪 amiodarone can cause **HYPO** or hyper

Mesothelioma 🡪 Amphibole. Asbestos fibers

↑ ACE 🡪 Sarcoidosis

Activated macrophages 🡪 Gamma interferon. Granulomas.

Anergy 🡪 Sarcoidosis. Depletion of peripheral T cells that are consumed within the granuloma.

Situs inversus 🡪 Kartageners

Quarts 🡪 Silicosis

Serpentine 🡪 Abestos (good fiber)

Anthracosis 🡪 Carbon particles in lymph node

Wheezing 🡪 obstruction

Crackles 🡪 something in alveoli

RAST🡪 check for specific IgE. Extrinsic asthma/allergy test.

Loose fibrous plug in airway 🡪 good prognosis. BOOP

DIP 🡪 Desquamated interstitial pneumonia. Misnomer. Macrophages. Associated w smoking

Beta Blockers 🡪 bronchospasm

Eosinophilia 🡪 Churgg strauss & Extrinsic asthma

Calciuria 🡪 Sarcoidosis

Erythema nodosum 🡪 sarcoidosis

Cyanosis 🡪 chronic bronchitis. The Blue bloaters

**ATELECTASIS**

Peanut aspiration causing complete obstruction of the airway 🡪 absorption atelectasis

Ab to GM-CSF 🡪 acquired alveolar proteinosis

Plexogenic arteriopathy 🡪 primary pulmonary htn

Hyaline membrane/ARDS (these are used interchangeably) 🡪 Lines of Zahn. Usually seen in premortem thrombi

Increased LDH3 🡪 pulmonary infarction

Uremia 🡪 ARDS

Pleural plaques 🡪 Asbestos exposure

Bone marrow emboli 🡪 CPR incidental finding

Fat emboli w/ long bone fracture 🡪

Head injury 🡪 mostly assoc. w/ pulmonary edema and ARDS. This is mostly a neurogenic edema (not increased permeability)

Hypoxia refractory to O2 🡪 ARDS

Gelatinous sputum 🡪 alveolar proteinosis

**UNIT 5 (GI)**

Stress 🡪 aphthous ulcers (canker sores)

Swollen gums 🡪 AML5 & Dilantin

Glossitis🡪 pernicious anemia, Kawasaki, and plummer-vinson syndrome

Macroglossia 🡪 Adults = amyloid, Children = cretinism

Smoking 🡪 Carcinoma of larynx and oral cavity

EBV 🡪 Nasopharyngeal carcinoma

Anti Ro 🡪 Sjogren syndrome (intrauterine fetal heart block)

Stevens Johnson syndrome 🡪 vesicular rash of skin and oral mucosa and is usually associated w/ antibiotic therapy

Koplik spots 🡪 measles

Ludwig angina 🡪 pancytopenia, gingivitis, and inflammation extending to the neck causing cellulitis of the neck

Orchitis 🡪 Mumps

lymphoid stroma (as associated w/ salivary gland tumors) 🡪 Warten

Myxoid stroma (as associated w/ salivary gland tumors) 🡪 pleomorphic adenoma

Erythema multiforme 🡪 early malignancies, drugs, collagen vascular disease.

Pseudomembrane 🡪 Candida (can scrap it off)

Mucormycosis 🡪 diabetes

Fibrous thickening of the gingivae🡪 phenytoin (Dilantin)

Risk of lymphoma 🡪 Sjogren

Chronic irritation of vocal cords 🡪 Singer’s nodules

Plummer Vinson syndrome 🡪 iron deficiency anemia, chylosis, glossitis, upper esophageal web

Malorie Weiss Syndrome 🡪 longitudinal tear of mucosa of esophagus following forcible vomiting (assn. w/ heavy drinking)

If perforates 🡪 Boerhaave

Epiphrenic diverticulum 🡪 above LES. Fluid accumulates in outpouching and when person lies down, a large amount of fluid can regurgitate upward

Portal hypertension 🡪 esophageal varices (due to dilation of collaterals – namely venous plexuses in lower esophagus) Closely associated with alcoholic cirrhosis of liver

Diminished myenteric ganglia 🡪 achalasia

Chagas disease 🡪 achalasia, dilatation of 3 different organs: heart, esophagus, colon

Barrett’s Esophagus 🡪 Metaplastic changes at the lower end of the esophagus. Intestinal metaplasia (looks like intestinal mucosa)

Medical student presents to health center on June 12 due to whitish painful lesion on buccal surface of lip. Worried because she is taking her step 1 exam on June 16. Diagnosis: Aphthous ulcer (canker sore) associated with stress

65 yo lady has received multiple antibiotics for pneumonia. Comes to ER with red vesicular lesions of lip, face, oral cavity. Diagnosis: Stevens Johnson Syndrome (precursor of Steven Johnson is erythema multiforme if doesn’t involve buccal mucosa)

35 y/o Male presents with fatigue and pallor for 6 months. Physical exam reveals cracked lips and red beefy tongue. Hemoglobin of 8 (anemic). MCV is 70 (microcytic anemia). Differential: Plummer Vinson. Upper endoscopy should show upper esophageal web

16 year old boy receiving chemo for ALL. Develops pain and dysphagia. Endoscopy reveals small shallow ulcers in esophagus. Diagnosis: Herpetic ulcers (he’s immunosuppressed from the chemo so prone to infections and #1 infections in the esophagus are from Herpes)

45 yo female presents with cc of food sticking when she eats. Barium swallow shows marked dilatation of esophagus. Diagnosis: Achalasia

35 yo female presents with hematemesis following birthday party where had 6 mixed drinks and 4 beers. Vomited 3 times on the way home. Diagnosis: Mallorie Weiss

5 yo boy from Kenya presents with difficulty swallowing and breathing. Exam reveals a mass in his nasopharynx showing necrosis. Diagnosis: Nasopharyngeal carcinoma caused by EBV

Olive like mass 🡪 congenital pyloric stenosis

Anti H,K ATPase 🡪 atrophic gastritis

Gastrinoma 🡪 Zollinger Ellison syndrome

Cushing ulcer 🡪 acute gastric ulcer usually associated with head injury

Protein losing gastropathy 🡪 Menetrier’s disease

Krukenberg tumor 🡪 metastatic gastric carcinomas to the ovaries from the signet ring (gastric type) type of gastric caner

Nitrite preservatives 🡪 gastric carcinoma

E cadherin mutation 🡪 gastric cancer

Urea breath test 🡪 H pylori

45 yo female presents with problems with her balance for 6 months. And numbness of her fingers. On physical exam she is pale and has loss of vibratory sensations. Differential: Numbness means neurological issue. Also problems with balance—if you ask her to close her eyes and walk she will tilt to one side. Possibly pernicious anemia because they usually have subacute combined degeneration. If you suspect it tests to run: CBC to see if anemic or not. Will find macrocytic anemia. Check serum B12 – will be low. Upper endoscopy will show atrophic gastritis. Run antibodies for anti intrinsic and antiparietal. On peripheral smear, might see hypersegmented neutrophils (>5 segments)

35 yo female who has had watery diarrhea for 1 year. 6-7 bowel movements per day. 2 episodes of hematemesis. Upper endoscopy shows multiple gastric and duodenal ulcers. Differential: Zollinger Ellison. Tests to run: Gastrin level. Will be elevated.

70 yo Japanese immigrant male presents with hematemesis and epigastric pain for 12 months and an enlarged left supraclavicular node. Diagnosis: Gastric carcinoma. The node is the Virchow node. Endoscopy may show: a flat lesion, an excavated lesion, a fungating lesion, linitis plastica w/ a very thick stomach wall. If patient was a female who came in with an ovarian mass in addition to the other symptoms, ovarian mass would be a Krukenberg tumor

55 yo male presents with loss of appetite and pedal edema for 8 months. Feels full after eating small amounts of food. Differential: protein losing gastropathy. Feels full because stomach lumen is smaller because rugae are hypertrophic. Endoscopy will show thickened rugae. This is Menetriere disease.

65 yo female with history of epigastric pain and barrett’s esophagus. Scope shows small nodule in stomach. Biopsy reveals homogeneous lymphocytic population. Differential: MALT lymphoma. Need to look for H pylori (urea breath test) and 11:18 translocation with MALT. Radiation treatment is usually very successful.

3 week old baby presents with projectile vomiting for 2 days. Diagnosis: hypertrophic pyloric stenosis. Will see peristalsis and will feel olive mass

51 yo bipolar patient presents with loss of appetite, sense of gastric fullness, and abdominal x-ray reveals a large mass in his stomach. Differential: Bezoar—probably trichobezoar. Scope will show ball of hair. Ultrasound is even better – can see the lumen and actually see the ball inside the stomach

PAS positive rods 🡪 Whipple disease

Acanthocytes 🡪 abetalipoproteinemia

Antigliadin 🡪 Celiac sprue

Osmotic diarrhea 🡪 lactase deficiency

Bloody, painful, low volume diarrhea 🡪 dysentery

Strangulated🡪 obstruction of artery and veins

Incarcerated 🡪 obstructed vein only

11:18 translocation 🡪 MALT (can also occur in small intestine)

Rotavirus 🡪 diarrhea in infants

Obstructive jaundice 🡪 tumor of ampulla

40 yo AA female presents with chronic complaint of bloating and excessive gas especially after eating pizza. Diagnosis: lactase deficiency

31 yo Caucasian male with vesicular erythematous rash on left elbow. Rash is pruritic. Lost 15 pounds in last four months. Ask about diet (I like sandwiches but they make me feel worse). Patient has celiac sprue. Rash is dermatitis herpetiformis. Tests to run: antigliadin, antiglutaminase, antiendomysial. Biopsy of skin: want to do IF to see IgA present in dermal papillae of the skin lesion

60 yo male presents with bloating, diarrhea and arthralgias for 6 months. Hyperpigmented patches on hands and neck. Mini-mental status exam reveals some confusion. Diagnosis: whipple. Tests: biopsy of small bowel will show PAS positive rods within macrophages in the lamina propria

25 yo medical students presents with steatorrhea and abdominal pain 3 weeks after returning from spring break where he vacationed with his friends in the Grand Cayman. Diagnosis: Giardia (or could be tropical sprue). Tests: look at stool

7 yo male presents with watery diarrhea for 3 days. 2 of his best friends at school have had the same problem. Diagnosis: Norwalk virus

After an office party 5 people start vomiting. Ate eggs and chicken salad. Diagnosis: staph aureus food poisoning

2 day old infant vomits after every feeding and develops a fever, pulmonary infiltrates with difficulty breathing. Dx: esophageal fistula w/ aspiration. Why not pyloric obstruction? B/c that does not present until 2-3 weeks; can also have aspiration w/ pyloric obstruction.

35 y/o lady presents w/ dysphagia for 6 months. You do endoscopy and you see narrowing of the esophagus and bx reveals severe fibrosis. You also expect to see scleroderma and stricture. In systemic scerloderma the patient would also be complaining of dyspnea, shortness of breath, raynauds, tight or leathery skin. On PE you can find out the patient has HTN (prob malignant) that the patient may not be aware of. Scl70 is associated w/ systemic scleroderma. If she had CREST (not the systemic disease) you would she telangiectasia in the eyes and maybe on her nose and she would still have raynauds. If she had CREST you would speckled ANA pattern and anti-centromere antibodies.

35 y/o HIV+ male presents w/ bad taste in his mouth and yellowish white lesion on his tongue which can be scraped off. He asks if he’s going to develop cancer of his tongue. Dx: oral thrush (candida). It is not leukoplakia b/c leukoplakia cannot be scrapped off.

Boerhaave syndrome🡪 lacerations (Mallory Weiss syndrome) w/ perforated esophagus

29 y/o missionary from Guatemala presents w/ dysphagia, HF, and constipation. PE shows he has pedal edema and bilateral pulmonary crackles. Tests: BNP is high, EKG shows LV hypertrophy. Echo shows dilated cardiomyopathy. He remembers that 6 years ago he had a febrile illness for 10 days and he had a swollen face at the time. Dx: Chagas Dz—dilated esophagus (achalasia), the dilated cardiomyopathy, and constipation is due to toxic megacolon.

Lady who has facial palsy and swelling of her L cheek. Dx: salivary gland tumor of some kind. So bx of the mass reveals glands embedded in myxoid stroma. Dx: pleomorphic adenoma.

40 y/o man presents w/ regurgitation of large amts of fluids during his sleep. Dx: Epiphrenic Diverticulum, which is right above the LES.

Baby presents w/ abdominal distention, abdominal tenderness, & absent bowel sounds also blood in stools. X ray reveals distended loops of small bowel. Dx: intussusception. Also may have ischemia b/c of obstruction from the one segment going into the other segment.

Older gentleman w/ DM, HTN, hyperlipidemia. He comes into the ER w/ severe abdominal pain and bloody stools. Dx: Ischemic bowel.

45 y/o banker (type A personality) presents w/ severe epigastric pain boring to his back and black tarry stool (melena). Dx: Peptic ulcer. Remember Type A personalities are more prone to develop peptic ulcers.

25 y/o male presents w/ bilateral testicular pain following a viral illness. Dx: Mumps.

Transmural inflammation🡪 Crohns disease

Crypt abscess 🡪 ulcerative colitis

Fistula🡪 Crohn

Stricture 🡪 Crohn

Skip Lesions 🡪 Crohn

↑ risk of carcinoma 🡪 UC

Antibiotics🡪 pseudomembraneous colitis

Failure to pass meconium🡪 Hirschsprung

Toxic megacolon🡪 UC

Ischemic bowel 🡪 Chagas

Pseudomembraneous colitis 🡪 Hirschsprung

Melanosis of the lip 🡪 Peutx-Jegher

Hypokalemia 🡪 villous adenoma

Microvesicular fat 🡪 amiodarone, pregnancy, tetracycline, Reye’s syndrome

Fatal in pregnancy 🡪 Hepatitis E

Hep B surface antibody body positive, surface antigen negative, core antibody negative 🡪 vaccine

Anti smooth muscle antibody 🡪 Type 1 autoimmune hepatitis

Anti kidney, liver, microsome antibody 🡪 Type 2 autoimmune hepatitis

Fulminant hepatitis 🡪 Type A and B

Fatty infiltration with hepatitis 🡪 Hep C

Low hepsidin with hemochromatosis 🡪 C2A2Y mutation. You have Iron in hepatocytes—Causes damage and cirrhosis

Iron in kuppfer cells 🡪 hemosiderosis

Empysema + liver disease 🡪 alpha 1 antitrypsin deficiency

Elevated serum alpha fetoprotein 🡪 hepatocellular carcinoma

Onion skinning 🡪 primary sclerosis cholangitis. IBD association

Primary biliary cirrhosis 🡪 antimitochondrial antibody, pruritis, granulomas, low CD4

Oral contraceptives 🡪 adenoma, cholestasis, rarely budd chiari syndrome

Black liver 🡪 Dubin Johnson syndrome

Vinyl chloride 🡪 angiosarcoma

Absent UGT 🡪 Crigler Najjar type 1

23 y/o female presents with severe RUQ pain. Has been using OCCP (oral contraceptive pills) for 3 years. Diagnosis: ruptured adenoma of the liver

10 y/o male. Develops fever. Given aspirin. 2 days later and starts vomiting and becomes lethargic. Unresponsive on physical exam. ALT elevated, ammonia high, sugar very low. Dies in ER. Autotopsy shows microvesicular fatty liver Diagnosis: Reye’s syndrome

SPINK1🡪 familial pancreatitis, Cancer in the ovaries

Fat necrosis🡪 lipase

Pseudocyst🡪chronic pancreatitis, no epithelial lining

Trousseau sign🡪10% of pts w/ pancreatic CA

cystic fibrosis🡪pancreatitis viscous secretions

Obstructive jaundice (extra hepatic)🡪CA head of the pancreas

Obstructive jaundice 🡪 carcinoma in head of pancreas

Trousseau sign 🡪 marantic endocarditis

Young males presents with pain and jaundice and onion skinning. History of IBD. Imaging beading of pancreatic ducts plus pANCA

Amyloid type 2 diabetes PPARgamma diabetes type 2. Islet hyperplasia in new born diabetes type.

Adipokines increase sensitivity to insulin

HbA1C 🡪 glycemic control

Osmotic diuresis 🡪 DKA

**UNIT 6**

Acanthosis 🡪 increased thickness of the epidermis

Spongiosis 🡪edema of the epidermis (lichen planus, lupus)

Wheal (hives) 🡪 urticaria (which is a type I hypersensitivity reaction)

Target lesions 🡪 erythema multiforme 🡪 mycoplasma

**Granular** IgG and C3 deposits 🡪 immune complexes at dermal epidermal junction (lupus). If you see these lesions in the lesion and in normal skin (SLE). If you only seen in the lesion, it’s discoid lupus (DLE)

Hydropic degeneration of basal layer 🡪 Civatte lesions 🡪 lichen planus (a chronic dermatoses)

Pigment incontinence 🡪 chronic dermatosis (Lichen planus and lupus)

Monro’s microabscess 🡪 lymphocytes within the epidermis. Psoriasis

Auspitz sign 🡪 bleeding when scratch because of the thinning of the skin. Psoriasis

Blistering diseases 🡪 suprabasilar vesicle and IgG binding to desmoglein 3 giving us INTERcellular IgG deposits is Pemphigus vulgaris. Also has Nikolsky’s sign (blister expands when you push on it)

Subepidermal blister and antibodies to hemidesmosomes and linear IgG and C3 at DE junction 🡪 bullous pemphigoid

Celiac disease 🡪IgA at tip of dermal papillae called Dermatitis herpetiformis

Morphea 🡪limited scleroderma

Progressive systemic sclerosis 🡪 anti-SCL70 (aka DNA topoisomerase) KNOW BOTH NAMES

Panniculitis 🡪 another term for erythema nodosum

Erythema nodosum 🡪 sarcoidosis, IBD

Leukocytoclastic vasculitis 🡪 fragmented PMNs. Compared to Microangiopathic hemolytic anemia where we have schistocytes

Koebner phenomenon 🡪 new lesions develop at sight of injury (old lesions). Seen in Lichen planus, psoriasis

Abnormal elastic fibers (elastosis) 🡪 senile aging, sun damage